

Title (en)
BORON-CONTAINING DOPANT COMPOSITIONS, SYSTEMS AND METHODS OF USE THEREOF FOR IMPROVING ION BEAM CURRENT AND PERFORMANCE DURING BORON ION IMPLANTATION

Title (de)
BORIONENHALTIGE DOTIERMITTELZUSAMMENSETZUNGEN, SYSTEME UND VERFAHREN ZUR VERWENDUNG DAVON ZUR VERBESSERUNG EINES IONENSTRAHLSTROMS UND DER LEISTUNG WÄHREND EINER BORIONENIMPLANTATION

Title (fr)
COMPOSITIONS DE DOPAGE CONTENANT DU BORE, SYSTÈMES ET PROCÉDÉS D'UTILISATION DE CELLES-CI POUR AMÉLIORER LE COURANT ET LES PERFORMANCES DU FAISCEAU D'IONS PENDANT UNE IMPLANTATION D'IONS DE BORE

Publication
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Application
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Priority
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Abstract (en)
[origin: WO2015134430A1] A novel composition, system and method thereof for improving beam current during boron ion implantation are provided. The boron ion implant process involves utilizing B₂H₆, BF₃ and H₂ at specific ranges of concentrations. The B₂H₆ is selected to have an ionization cross-section higher than that of the BF₃ at an operating arc voltage of an ion source utilized during generation and implantation of active hydrogen ions species. The hydrogen allows higher levels of B₂H₆ to be introduced into the BF₃ without reduction in F ion scavenging. The active boron ions produce an improved beam current characterized by maintaining or increasing the beam current level without incurring degradation of the ion source when compared to a beam current generated from conventional boron precursor materials.

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